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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/482,956	01/14/2000	Mrudula Kanuri	95-309	7724

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EXAMINER
VU, THONG N

ART UNIT	PAPER NUMBER
2666	5

DATE MAILED: 03/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

	Application No.	Applicant(s)
Office Action Summary	09/482,956	KANURI, MRUDULA
	Examiner	Art Unit
	Thong N. Vu	2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-20</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>13 April 2001</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> .	6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United
States before the invention thereof by the applicant for patent, or on an international application by another who
has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention
thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999

(AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002

do not apply when the reference is a U.S. patent resulting directly or indirectly from an

international application filed before November 29, 2000. Therefore, the prior art date of the

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA

35 U.S.C. 102(e)).

1.   Claims 1-6, 10-13, 17-18 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated

by Vig (U.S. Patent No. 6,115,385).

A. Regarding claim 1, Vig discloses a method in an integrated network switch having a

switching module or switch CPU, the integrated network switch configured for switching a layer

data packet with a network having a plurality of subnetworks in column 3 lines 7-11, the method

comprising:

-obtaining, from the layer 2 packet, layer 3 packet information having a network

identifier, a subnetwork identifier, and a host identifier anticipated by a step of getting an IP

address having a network identifier, a subnetwork identifier and a host identifier as taught in the

reference, in column 3 line 67 and in column 4 lines 1 & 46, respectively; and

-storing address information from the layer 2 packet in a selected one of a plurality of

address tables within the switching module based on the corresponding subnetwork identifier

anticipated by a step of learning MAC addresses and keeping internal tables that map MAC

addresses to switch ports, as taught in the reference in column 6, lines 39-40.

B. Regarding claim 2, Vig describes the received data packet including an IP header, the

storing step storing the host identifier from the IP header and layer 2 address information from

layer 2 packet into a single table entry anticipated by showing the packet with layer 2 header and

the MAC address of the packets can be found based on the entry in the internal mapping table, as

taught in the reference in column 6, lines 38 & 41-43, respectively.

C. Regarding claims 3-4 and 12-13, Vig teaches the network switch including a plurality

of network switch ports, the storing step including selecting the one address table based on the

network switch port anticipated by keeping internal tables that map MAC addresses to switch

ports as taught in the reference, in column 6 lines 39-40, and further comprising assigning each

of the address table to a corresponding one of the network switch ports anticipated by the MAC

address is switched to the correct port based on the entry in the internal mapping table in column

6, lines 41-43.

D. Regarding claim 5, Vig depicts the obtaining step comprises:

-obtaining an IP source address from the IP header anticipated by a step of getting IP

address from IP ARP packet header in column 8, lines 32-34;

-obtaining the subnetwork identifier and the host identifier from the IP source address

anticipated by a step of getting subnetwork ID and host ID from a block of IP addresses in

column 4, line 46.

E. Regarding claim 6, Vig discloses the storing step comprises:

-searching the selected address table based on the host identifier anticipated by a step of

finding the MAC addresses of incoming packets based on the entry in the internal mapping table

in column 6, lines 41-43; and

-storing the address information based on a determined absence of the stored table entry

anticipated by a step of learning MAC addresses in column 6, line 39.

F. Regarding claim 10, Vig depicts a method in an integrated network switch having a

switching module, the integrated network switch configured for switching a layer data packet

with a network having a plurality of subnetworks in column 3 lines 7-11, the method comprising:

-obtaining, from the layer 2 packet, layer 3 packet information having a network

identifier, a subnetwork identifier, and a host identifier anticipated by a step of getting an IP

address having a network identifier, a subnetwork identifier and a host identifier as taught in the

reference, in column 3 line 67 and in column 4 lines 1 & 46, respectively;

-selecting one of a plurality of address tables based on the corresponding subnetwork

identifier anticipated by a step of selectively forwarding packet with destination address to a

subset of switch port based on lay-3 information like destination subnet as taught in the

reference, in column 8, lines 8-12; and

-searching the selected address table for layer 3 switching information based on the host

identifier anticipated by a step of finding the MAC addresses of incoming packets based on the

entry in the internal mapping table in column 6, lines 41-43.

G. Regarding claim 11, Vig describes the received data packet including an IP header

anticipated by a layer 3 header in column 3 line 11, and the obtaining step obtaining the

subnetwork identifier and the host identifier from the IP header anticipated by a step of dividing

the host identifier into a subnetwork identifier and a host identifier, as taught in the reference in

column 4 lines 40-41.

H. Regarding claim 17, Vig discloses an integrated network switch configured for

switching layer 2 data packet in column 6, line 32, the switch including:

-a plurality of network switch ports, having layer 3 packet information having a network

identifier, a subnetwork identifier and a host identifier anticipated by a plurality of switch ports

have layer-3 information, in column 8 line 11, having a network identifier, a subnetwork

identifier and a host identifier in column 3 line 67 and in column 4 lines 1 & 46, respectively;

-a switching module configured for switching the layer 2 data packets between the

network switch ports according to layer 3 switching information, the switching module including

a plurality of address tables and accessing the address table based on the subnetwork identifier

and searching for layer 3 information based on the host identifier anticipated by a switching CPU

configured the subnet information by analyzing layer-2 packets and the layer-3 header in column

3 lines 10-11, the switch learns MAC addresses and keeps internal tables that map MAC address

to switch ports in column 6 lines 39-40, implementing the MAC tables to forward multicast

address to the switch CPU in column 8 lines 3-4, and finding the MAC addresses based on the internal mapping table in column 6, lines 41-43.

I. Regarding claim 18, Vig describes the switching module is configured form independently and simultaneously accessing the address tables for layer-3 information anticipated by switch CPU can analyze the packet and selectively forward it to a subset of switch ports based on layer-3 information in column 8, lines 9-12.

J. Regarding claim 20, Vig relates each of the switching ports obtains the subnetwork identifier and the host identifier anticipated by getting a block of IP addresses having a subnetwork ID and a host ID in column 4, lines 39-41.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 7-9,14-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vig (U.S. Patent No. 6,115,385) in view of Chiang et al. (U.S. Patent No. 6,529,503).

A. Regarding claims 7-8 and 14-15, Vig discloses all subject matter of claimed invention as explained in paragraphs 1.A-B and 1.D-E above, with the exception of searching for the stored table entry according to a linked list search, generating a hash key based on the host identifier and searching for the stored table entry using the generated hash key. Chiang et al. from the same field or similar field of endeavor teach:

-searching for the stored table entry according to a linked list search corresponds to a step

of searching for a particular address within the address table using a linked list as taught in the

reference, in column 16, line 17-22;

-generating a hash key based on the host identifier corresponds to a step of generating a

hash key using the source address in column 16, lines 65-66; and

-searching for stored table entry using the generated hash key corresponds to a step of

performing a hash search of the address table, as taught in the reference, in column 16, lines 46-

47.

Thus, it would have been obvious to the person of ordinary skill in the art at the time of

the invention to combine the method as taught by Chiang et al. with the method of Vig. The

motivation for using this combination is being that saving the processing time associated with the

performing search address table.

B. Regarding claims 9 and 16, Vig discloses all subject matter of claimed invention as

explained in paragraphs 1.A-B and 1.D-E above, with the exception of showing the network

switch is an integrated circuit chip and the searching step including searching the selected

address table according to a wire rate. Chiang et al. from the same field or similar field of

endeavor teach a plurality of integrated multiport switches in column 3, lines 15-16; and the

searching step including searching the selected address table according to a wire rate corresponds

to a step of look-upping the address table according network data rate in column 1 lines 31-32

and column 3 lines 20-23. Thus, it would have been obvious to the person of ordinary skill in

the art at the time of the invention to combine the method as taught by Chiang et al. with the

method of Vig. The motivation for using this combination is being that reducing searching time on the addresses.

C. Regarding claim 19, Vig discloses all subject matter of claimed invention as explained in paragraphs 1.H and 1.J above with the exception of searching each address table using one of a linked list search and a hash key-based bin search. Chiang et al. from the same field or similar field of endeavor teach a method of performing a hash search of the address table, as taught in the reference, in column 16, lines 46-47. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to combine the method as taught by Chiang et al. with the method of Vig. The motivation for using this combination is being that reducing searching time on the addresses.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong N. Vu whose telephone number is 703-305-6959. The examiner can normally be reached on Monday - Friday; 8:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 703-308-5463. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9313 for regular communications and 703-872-9313 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Seema S. Rao
Supervisory Patent Examiner
AU 2666   3/24/03

T. Vu
March 20, 2003